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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,346	09/23/2005	Kong Lim Toh	DE 030087	1325

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EXAMINER	
LEE, BENNY T	

ART UNIT	PAPER NUMBER
2817	

NOTIFICATION DATE	DELIVERY MODE
06/26/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/550,346	TOH, KONG LIM	
	Examiner	Art Unit	
	Benny Lee	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 September 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *23 September 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: At all occurrences through out the specification, note that "analogue" should be spelled as --analog--. Page 1, line 12, note that a --,-- should be inserted after "applications" for grammatical correctness; line 23, note that "US-A-" should be rephrased as --US Patent No.-- for an appropriate characterization. Page 2, line 34, note that "E.g." should properly be –For example,--. Page 3, line 7, note that "allows to control" should be rephrased as --allows control of-- for grammatical correctness. Page 4, line 15, note that "circuiting" should be rewritten as --circuitry-- for an appropriate characterization; line 24, note that a --,-- should follow "11" for grammatical correctness. Page 7, lines 7, 8, note that "1,0", "0,44" & "1,0" should be respectively rewritten as --1.0--, --0.44-- & --1.0-- as to be consistent with U.S. nomenclature.

The disclosure is objected to because of the following informalities: Note that subheadings should be provided to delineate the different portions of the specification (e.g. --Summary of the Invention--; --Brief Description of the Drawings--; etc) for clarity of description. Page 2, lines 8, 9, note that the reference to "claim 1", "claim 9" and "dependent claims" are inappropriate and should be deleted therefrom (e.g. after examination of the application, it may be possible that "claim 1","claim 9", etc may no longer be present in the application, and thus their description here at would be inappropriate). Page 6, line 14 & page 7, line 1, note that "high insulation" should be rephrased as --high isolation-- for a proper characterization. Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that the following reference labels appearing in the indicated drawing figure needs a corresponding specification description relative to that drawing figure: Fig. 2 (I^2C); fig. 4 (48, 50, 52, PESW); Figs. 4, 5 (5V_SW). Appropriate correction is required.

The drawings are objected to because of the following: In figs. 3, 5, should "5V_SW" be rewritten as --5V_V_{SW}-- for an appropriate characterization?; In Fig. 3, should "$\underline{V}_{SW}$" properly be --V_{SW}-- for an appropriate characterization?. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the

following is required: The specification needs to provide a description that the "second switch" is "an integrated circuit" such as recited in claim 5.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: In claim 1, an operative connection between the first switches and/or the second switch with respect to the "output terminal".

The following claims have been found objectionable for reasons set forth below:

In claim 1, line 5, should --each of-- precede "said" for an appropriate characterization?; penultimate line, should --respective-- precede "second" for an appropriate characterization?

In claim 2, note that --each-- should precede "implemented" for an appropriate characterization.

In claim 3, line 3, note that --the-- should precede "first" and --respectively-- should precede "implemented" for appropriate characterizations.

In claim 6, line 3, note that "control first and second switches (28, 30, 32)" should be rephrased as --control first switches (28, 30) and the second switch (32)-- for an appropriate characterization.

In claim 7, lines 5, 7, note that --of the at least two driver circuits-- should be inserted prior to each occurrence of "provides" for an appropriate characterization.

In claim 8, note that "one of" should be deleted as being unnecessary.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 6, 7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Heckaman et al.

Heckaman et al (Fig. 6) discloses a switch circuit device comprising: two input terminals (i.e. RF IN 28, RF IN 30) and an output terminal (i.e. RF OUT 35); first switches (i.e. SPST switch modules 20, 22) having first and second ports (i.e. one port is connected to the corresponding RF IN terminal; another port is connected to corresponding transmission lines 36, 38); and a second switch (i.e. SPDT module 24) having branch ports connected to corresponding SPST modules (20, 22) via corresponding transmission lines (36, 38). As known to those of ordinary skill in the art, an SPST (i.e. single pole-single throw) switch functions to provide either a high insertion loss (i.e. open) state or a low insertion loss (i.e. closed) state depending on the bias voltage (i.e. 5V/0V) applied to the transistors of the corresponding SPST switch. In a similar manner, an SPDT (i.e. single pole-double throw) switch functions to provide either a low insertion loss (i.e. closed) state to one of the branches while providing a high insertion loss (i.e. open) state to the other one of the two branches or vice versa depending on the complementary bias voltage (i.e. 5V/0V or 0V/5V) applied to the corresponding branch. Regarding claim 4, it should be noted that each one of SPST switch module comprises of a plurality of "discrete electronic parts" (i.e. a plurality of transistors". Regarding claim 5, note that Fig. 13, which is a physical realization of the switch in the fig. 6 embodiment, discloses that the switches are disposed in an "integrated circuit" configuration upon a substrate. With regard to the operation of the bias voltage being applied to the corresponding switches, note that the description at column

5, line 64 to column 6, line 2 and column 6, lines 11-21 describe how only two bias voltages or "drivers" are needed to provided the complementary bias control voltages to selectively switch the SPST & SPDT switch modules.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heckaman et al.

Heckaman et al (Fig. 6) discloses the claimed invention except that the "first switches" are implemented by transistors and not PIN (i.e. switching) diodes.

However, as disclosed in an alternative realization of the switches, Heckaman et al (Fig. 3) discloses that such switches can alternatively be realized by switching PIN diodes.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the SPST switches of Fig. 6 having transistors with the PIN diodes as used with the alternative embodiment of Fig. 3. Such a modification would have been considered an obvious substitution of art recognized components usable in an SPST switch, especially since PIN diodes and transistors perform the equivalent function within the context of the disclosed SPST switch, thereby suggesting the obviousness of such a modification.

Claims 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heckaman et al in combination with Atokawa et al.

As described above Heckaman et al discloses the claimed SPST/SPDT switch combination, as claimed, but does not disclose the use of such a switch combination in conjunction with a transceiver circuit.

Atokawa (fig. 1) discloses a transceiver circuit (i.e. transmit/receive filter 1) having two input terminals (i.e. antennas 8, 9), a tuner circuit (i.e. receive filter 3); and a switch circuit (i.e. SPDT switch (4) operatively connected to switches (6, 7) which equivalently function as SPST switches) selectively connecting the antennas (8, 9) to the tuner input (i.e. ant2).

Accordingly, it would have been obvious in view of the references, taken as a whole, to have realized the switch circuit (i.e. SPDT switch (4) in conjunction with SPST switches 6, 7) in Atokawa et al by the electrically equivalent switch in Heckaman et al (Fig. 6). Such a modification would have been considered an obvious substitution of art recognized equivalent switches, especially since the switch in Atokawa et al has the same electrical configuration as the switch combination in Heckaman et al, thereby suggesting the compatability and thus the obviousness of such a modification. Moreover, as disclosed in Atokawa et al, each switch is electrically connected to a control circuit for controlling the switching state of the transceiver.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 571 272 1764.

Benny Lee

B. Lee

BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817